

Claims

1. A loading unit for a shoe press, especially designed to apply a load to the shoe (70) of the shoe press, said unit comprising a first cylinder part and a first piston part disposed in the cylinder part (6, 71), a first piston part (1, 114) arranged in the cylinder part, in which piston part the surface (2) facing towards the inner wall of the cylinder part is so shaped as to permit mutual tilting of the piston part and the cylinder part, **characterized** in that the piston part (1) and/or the cylinder part (6) are/is provided with means for arranging a loading element (K) and/or the press shoe (70) to be movable in the longitudinal direction (MD) of the machine and that the piston part (1) and/or cylinder part are/is provided with means (22) for reducing lateral forces between the loading element and the shoe press supporting beam (12) or equivalent.
2. A loading unit according to claim 1, **characterized** in that the loading unit (K) is at least partially supported on transfer means (225, 226, 185) at least at one end, either on the side of the press beam (70) or on the side of the supporting beam (12).
3. A loading unit according to claim 1 or 2, **characterized** in that the loading unit (K) is at least partially supported on the transfer means at least at one end, either on the side of the press beam (70) or on the side of the supporting beam (12), in such manner that the transfer means (225, 226, 185) are locked at least when the compressive action of the loading unit is on.
4. A loading unit according to any one of claims 1 - 3, **characterized** in that the loading unit (K) contains a second cylinder-piston unit (86, 100, 105) arranged inside it.
5. A loading unit according to any one of claims 1 - 4, **characterized** in that the cylinder part (86) of the second cylinder-piston unit is so arranged in the first cylinder part (71) that it extends into the chamber space (S) between the first cylinder part (71) and the first piston part (86).

6. A loading unit according to any one of claims 1 - 5, **characterized** in that the piston rod (105) of the piston part (100) of the second cylinder-piston unit is arranged, preferably by the opposite end
5 relative to the second piston part (100), in the first piston part (114).

7. A loading unit according to any one of claims 1 - 6, **characterized** in that the piston rod (100) of the second cylinder-piston unit is arranged in the first piston part (114) in a manner permitting motion
10 and/or tilting.

8. A loading unit according to any one of claims 1 - 7, **characterized** in that the piston rod (100) of the second cylinder-piston unit is arranged in the first piston part (114) with a joint (113) that preferably
15 comprises a spherical surface part.

9. A loading unit according to any one of claims 1 - 8, **characterized** in that the loading unit (K) further comprises at least one flow path (22) from the chamber space (S) between the first cylinder part
20 (6, 71) and the first piston part (1, 114) to the space between the loading unit (K) and the supporting surface, such as the supporting beam (12).

10. A loading unit according to any one of claims 1 - 9, **characterized** in that it comprises at least one first flow path (116) arranged in
25 the loading unit (K) for conveying a pressure medium into the chamber space (S) between the first piston and the first cylinder.

11. A loading unit according to any one of claims 1 - 10, **characterized** in that the apparatus comprises at least one flow path (196,
30 107) leading into the chamber space (S3) between the second cylinder space and the second piston.

12. A loading unit according to any one of claims 1 - 11, **characterized** in that the apparatus comprises a flow path (130, 131, 132)
35 into a second chamber space (S2) between the second cylinder space

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and the second piston, said chamber space being located on the side of the piston rod (105).